

**Notice of Allowability**

Application No.

10/796,645

Examiner

Nikita Wells

Applicant(s)

MALEK ET AL.

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to "Amendment in Response to Advisory Action" received 20 November 2006.
2. ☒ The allowed claim(s) is/are 2-5 and 7-31.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

Nikita Wells  
Primary Examiner  
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## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 2-5 and 7-31 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The Applicant amended claims 2-5, 7-17 and 27, canceled claims 1 and 6, and presented arguments in favor of allowance of the independent claims according to the "Amendment under 37 CFR §1.116 in Response to Advisory Action" received November 20, 2006. As per the suggestions made by the Examiners in the telephone interview of August 30, 2006, the Applicant has amended independent claims 15, 16, and 27. The 35 U.S.C. 103(a) rejection over the references of Naito et al. (XP-002343881), P.B. O'Connor (6,720,555), and Meek et al. (4,686,365), is now no longer applicable to the Applicant's invention.

With respect to the independent claim 15, Naito et al, P.B. O'Connor, and Meek et al., or any other prior art, fail to disclose, in combination with other recited features of the claim limitations, an ion cyclotron (ICR) mass spectrometer, comprising: an external ion source arrangement to generate ions to be analyzed; an ion storage device arranged to receive and trap the generated ions; a measurement cell for receiving ions from the ion storage device, the measurement cell being arranged to be maintained at a pressure lower than that of the ion storage device; a magnet assembly, including a superconducting magnet which has a room temperature magnet bore arranged to receive the measurement cell, and wherein the ratio,  $R$ , of the sectional area of the magnet bore to the sectional area of the cell volume, each defined in a plane perpendicular to the said longitudinal axis, is less than 4.25. The key element of the Applicant's

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invention, not disclosed by prior art, is that the measurement cell is arranged to be maintained at a pressure lower than that of the ion storage device.

With respect to the independent claims 16 and 27, Naito et al, P.B. O'Connor, and Meek et al., or any other prior art, fail to disclose, in combination with other recited features of the claim limitations, a mass spectrometer and method of measurement, comprising: an ion source; an ion trapping device to receive the generated ions; ion optics means to guide the ions from the source into the ion trapping device; an FT-ICR mass spectrometer having a measurement cell located within a bore of a magnet, the cell being downstream of a front face of that magnet, the FT-ICR mass spectrometer; ion guiding means arranged between the ion trapping device and the FT-ICR mass spectrometer; and a power supply, wherein the power supply is configured to supply a potential which accelerates ions from the source or the ion trapping device to a kinetic energy  $E$  and to start to decelerate the said ions only immediately adjacent the front of the measurement cell, and continue to decelerate the said ions at least as far as the front of the measurement cell. The key element of the Applicant's invention, not disclosed by prior art, is the deceleration of the said ions adjacent to the front of the measurement cell, and continual deceleration of the said ions to the front of the measurement cell.

The dependent claims 2-5 and 7-14, 17, and 19, are allowed by virtue of their dependence upon the independent claim 15. The dependent claims 18 and 20-26, and 28-31 are allowed by virtue of their dependence upon the independent claim 16 and 27, respectively.

### ***Conclusion***

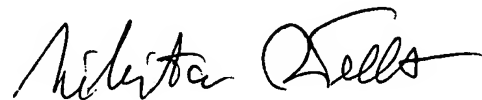
3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikita Wells whose telephone number is (571) 272-2484. The examiner can normally be reached on 8:30 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn, can be reached on (571) 272-2312. The central fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nikita Wells, Primary Examiner  
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December 13, 2006